

0055631



STL St. Louis
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Earth City, MO 63045

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ANALYTICAL REPORT

PROJECT NO. JA JONES VER

B01-075

Lot #: F1D270317

SDG #: W03440

Joan Kessner

Bechtel Hanford, Inc.
3190 George Washington Way
Richland, WA 99352

RECEIVED
OCT 30 2001
EDMC

SEVERN TRENT LABORATORIES, INC.

M Ward
MARTI WARD
Project Manager

May 18, 2001



**SEVERN
TRENT
SERVICES****CASE NARRATIVE**

STL St. Louis

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, Washington 99352

May 16, 2001

Attention: Joan Kessner

Project Number	:	41792
SAF	:	B01-075
SDG	:	W03440
Number of Samples	:	one
Sample Matrix	:	soil
Data Deliverable	:	Summary
Date SDG Closed	:	April 26, 2001

II. Introduction

On April 27, one (1) "solid" sample was received by STL--St. Louis for chemical analysis. The sample was received at the St. Louis lab at a temperature of 6 degrees C. See the COC and CUR forms for details of sample condition and temperature. See the attached Sample Summary form for the Lab ID's and corresponding Client Ids.

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. This report is not complete without the Case Narrative. Results are reported "as received"; i.e. wet weight, unless otherwise noted on the data sheets.

Analyses requested: Metals - 6010 Ba, Cd, Cr, + add on Pb

Deviation from Request: The metals were done using method 6010B in place of 6010A.

IV. Definitions

The following codes are used to denote laboratory quality control samples and can be found in the data summary section of this report:

QCBK- Quality Control Blank, Method Blank
QCLCS- Quality Control Laboratory Control Sample, Blank Spike
MS- Matrix Spike.
DUP- Matrix Duplicate
MSD- Matrix Spike Duplicate.

Bechtel Hanford Incorporated
May 16, 2001
Project Number: 41792
SDG: W03440
Page 2

STL St. Louis

V. Comments

General:

The term "Detection Limit" used in the analytical data reports refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

Please refer to the attached cross-reference table for the standard preparation methods used at Quanterra, St. Louis.

Metals:

A Laboratory Control Sample, Method Blank, Matrix Spike and Matrix Spike Duplicate were analyzed with each preparation batch per the protocol for this analysis.

The Cadmium MS/MSD recoveries were below the criteria at 65/64%. The data was flagged with an "N" qualifier. LCS recovery met the QC limits.

I certify that this Summary is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and approved:



Marti Ward
St. Louis Project Manager

SAMPLE SUMMARY

F1D270317

WO #	SAMPLE#	CLIENT	SAMPLE ID	SAMPLED	SAMP
				DATE	TIME
ECH43	001	B11RJ5		04/24/01	10:00

NOTE(S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

METHODS SUMMARY

F1D270317

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3050B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

PSL20300
Page 1SEVERN TRENT LABORATORIES, INC
CLIENT ANALYSIS SUMMARY
STL St. LouisRun Date: 4/27/01
Time: 16:53:02
User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.

PROJECT MANAGER: MARTI WARD

PROJECT #: JA JONES VER

REPORT TO: Joan Kessner

P.O. NUMBER: MRC-SBB-A-19981

SITE: B01-075

AMOUNT REC'D: 2X120G

STORAGE LOC: R14

LOT COMMENTS: Metals: CRDL standard required +/-25%

MATRIX: SOLID

SAMPLE ID: B11RJ5

QC PACKAGE: Special Report - see checklist

SAMPLE COMMENTS:

QUOTE/SAR #: 41792

LAB ID: F-1D270317-001

WORK ORDER: ECH43

RECEIVING DATE: 4/27/01

SAMPLING DATE: 4/24/01

ANALYTICAL DUE DATE: 5/15/01N

REPORT DUE DATE: 6/11/01

PRIORITY: 18

SAMPLING TIME: 10:00

RECEIVING TIME: 8:45

SDG# : W03440

Beginning Depth: .00 Ending Depth: .00

***** ANALYSIS *****

	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Inductively Coupled Plasma (6010B Trace)	06	4/27/01	0/00/00	10/21/01

METALS, TOTAL - Soils

MT6010_S BA,CD,CR,PB

(A-46-QM-01) ECH43

Protocol: A QC Program: STANDARD TEST SET

PSL20300
Page 1SEVERN TRENT LABORATORIES, INC
CLIENT ANALYSIS SUMMARY
STL St. LouisRun Date: 4/27/01
Time: 16:53:02
User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.

PROJECT MANAGER: MARTI WARD

PROJECT #: JA JONES VER

REPORT TO: Joan Kessner

P.O. NUMBER: MRC-SBB-A-19981

SITE: B01-075

AMOUNT REC'D: 2X120G

STORAGE LOC: R14

LOT COMMENTS: Metals: CRDL standard required +/-25%

MATRIX: SOLID

SAMPLE ID: B11RJ5

QC PACKAGE: Special Report - see checklist

SAMPLE COMMENTS:

QUOTE/SAR #: 41792

LAB ID: F-1D270317-001-D

WORK ORDER: ECH43 MSD

RECEIVING DATE: 4/27/01

SAMPLING DATE: 4/24/01

ANALYTICAL DUE DATE: 5/15/01N

REPORT DUE DATE: 6/11/01

PRIORITY: 18

SAMPLING TIME: 10:00

RECEIVING TIME: 8:45

SDG# : W03440

Beginning Depth: .00 Ending Depth: .00

***** ANALYSIS *****

WRK	REQUEST	EXTRACTION	ANALYSIS
LOC	DATE	EXP DATE	EXP DATE

Inductively Coupled Plasma (6010B Trace)	06	4/27/01	0/00/00	10/21/01
--	----	---------	---------	----------

METALS, TOTAL - Soils

MT6010_S BA,CD,CR,PB

(A-46-QM-01) ECH43

Protocol: A

QC Program: STANDARD TEST SET

PSL20300
Page 1SEVERN TRENT LABORATORIES, INC
CLIENT ANALYSIS SUMMARY
STL St. LouisRun Date: 4/27/01
Time: 16:53:02
User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.

PROJECT MANAGER: MARTI WARD

PROJECT #: JA JONES VER

REPORT TO: Joan Kessner

P.O. NUMBER: MRC-SBB-A-19981

SITE: B01-075

AMOUNT REC'D: 2X120G

STORAGE LOC: R14

LOT COMMENTS: Metals: CRDL standard required +/-25%

MATRIX: SOLID

SAMPLE ID: B11RJ5

QC PACKAGE: Special Report - see checklist

SAMPLE COMMENTS:

QUOTE/SAR #: 41792

LAB ID: F-1D270317-001-S

WORK ORDER: ECH43 MS

RECEIVING DATE: 4/27/01

SAMPLING DATE: 4/24/01

ANALYTICAL DUE DATE: 5/15/01N

REPORT DUE DATE: 6/11/01

PRIORITY: 18

SAMPLING TIME: 10:00

RECEIVING TIME: 8:45

SDG# : W03440

Beginning Depth: .00 Ending Depth: .00

***** ANALYSIS *****

	<u>WRK</u> <u>LOC</u>	<u>REQUEST</u> <u>DATE</u>	<u>EXTRACTION</u> <u>EXP DATE</u>	<u>ANALYSIS</u> <u>EXP DATE</u>
Inductively Coupled Plasma (6010B Trace) 06		4/27/01	0/00/00	10/21/01
METALS, TOTAL - Soils				
MT6010_S BA,CD,CR,PB				
(A-46-QM-01) ECH43	Protocol: A	QC Program:	STANDARD TEST SET	

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B01-075-2		Page 1 of 1	
Collector <i>Fah Henry / Watson</i>	Company Contact Lerch, JA	Telephone No. 373-5904	Project Coordinator TRENT, SJ		Price Code 9L	Data Turnaround 21 Days			
Project Designation JA Jones Verification Sampling - Other Solid	Sampling Location JA Jones Excavation		SAP No. B01-075		Air Quality <input type="checkbox"/>				
Ice Chest No. <i>CR01-015</i>	Field Logbook No. <i>EL 1517-2</i>	COA <i>JA0NAS 2600</i>	Method of Shipment Government Vehicle		<i>4.26.01 FEDERAL</i>				
Shipped To Savern Trent Incorporated	Offsite Property No. <i>A01091</i>		Bill of Lading/Air Bill No. <i>42357954-4068</i>						
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation	None	None			
Special Handling and/or Storage				Type of Container	uG	uG			
				No. of Container(s)	1	1			
				Volume	60mL	60mL			
				Activity Scan	See item (1) in Special Instructions.				
SAMPLE ANALYSIS <i>W03440</i>									
Sample No.	Matrix *	Sample Date	Sample Time						
B11RJ5	OTHER SOLID	04/24/01	1000	X	X	<i>2XJ20 609</i>	<i>sw 04.27.01</i>	<i>BLUR H9</i>	
	<i>Solid - see do main report 04.27.01 (booklet part)</i>					<i>100 % full</i>			
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From <i>R. Kelly</i>		Date/Time <i>4.24.01</i>		Received By/Stored In <i>Ref 2-B</i>		Date/Time <i>4.24.01</i>		<p>(1) ICP Metals - 6010A (TAL) (Barium, Cadmium, Chromium); ICP Metals - 6010A (Add-on) (Lead)</p> <p>Samples stored in Ref. # <i>2B</i> at the 3728 Shipping Facility on <i>4/24/01</i>. Collector not available to relinquish samples on <i>4/26/01</i> for shipment. <i>RT 4.26.01</i></p>	
Relinquished By/Removed From <i>R. Kelly</i>		Date/Time <i>4.26.01</i>		Received By/Stored In <i>Ref 2-B</i>		Date/Time <i>4.26.01</i>			
Relinquished By/Removed From <i>R. Kelly</i>		Date/Time <i>4.26.01</i>		Received By/Stored In <i>Ref 2-B</i>		Date/Time <i>4.26.01</i>			
Relinquished By/Removed From <i>FED EX</i>		Date/Time <i>4.26.01</i>		Received By/Stored In <i>Ref 2-B</i>		Date/Time <i>4.26.01</i>			
Relinquished By/Removed From <i>FED EX</i>		Date/Time <i>4.26.01</i>		Received By/Stored In <i>Ref 2-B</i>		Date/Time <i>4.26.01</i>			
LABORATORY SECTION				Received By				Date/Time	
FINAL SAMPLE DISPOSITION				Disposal Method				Disposed By	

ERC Radiological Counting Facility Analysis Report

RCF Number RCF9234

Sample Date & Time 4/24/01 1000

Project ID: JA JONES

SAF Number: B01-075

Date Analyzed 4/25/01 8:30:3

Sample ID: B11RHY

Gamma Energy Analysis

Nuclide	Activity (pCi/g)	Error (pCi/g)	MDC (pCi/g)
K-40	1.5E+01	±	5.3E+00
Co-60	< 3.3E-01		3.3E-01
Cs-137	< 2.9E-01		2.9E-01
Bu-152	< 6.8E-01		6.8E-01
Bu-154	< 8.1E-01		8.1E-01
Bu-155	< 7.2E-01		7.2E-01
Tl-208	< 7.6E-01		7.6E-01
Pb-212	< 3.2E+00		3.2E+00
Bi-214	< 2.3E+00		2.3E+00
Ra-226	< 5.0E+00		5.0E+00
Ac-228	< 1.0E+00		1.0E+00
Th-234	< 3.3E+00		3.3E+00
Pa-234	< 5.0E-01		5.0E-01
U-235	< 1.3E+00		1.3E+00
Am-241	< 4.4E-01		4.4E-01

Tie to
B11RJS

Total GEA (pCi/g) 1.5E+01 ± 5.3E+00

	Activity (pCi/g)	Error (pCi/g)
Gross Alpha**	8.1E-01	± 4.3E-01
Gross Beta	1.1E+01	± 1.2E+00

Alpha MDC
(pCi/g)
4.0E-01

Beta MDC
(pCi/g)
5.9E+00

Definitions:

All errors reported at 2 standard deviations.

N/E = no result or analysis not requested. <MDC = Less than detection limit.

All GEA results reported as "<" for the Minimum Detectable Concentration (MDC) value for that radionuclide.

Rounding error may result in the reported total GEA activity differing from the sum of the > MDC GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.

The analysis of Np-237 is based on the activity of Pa-233.

U-238m is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.

Th-232m is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.

Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.

**The gross alpha results are not corrected for mass absorption.

No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst


G. L. Hastings

4/25/01

Report To

Jeff Lorch

SJ Thent

Icon Kessner

Fax

373-5373

372-9292

372-9487

Report Printed: Wednesday, April 25, 2001

Condition Upon Receipt Variance Report
St. Louis Laboratory

Lot No.: F1D270317
W03440

Client: Bechtel Hanford

Date: 04.27.01 Time: 0845

Quote No: 41792

Initiated by: SN

Shipper/No: Fred X 4235 7954 4068

RFA/COC Numbers: B01-075-2

Condition/Variance (Check all that apply):

1. <input type="checkbox"/> Sample received broken/leaking.	8. <input type="checkbox"/> Sample ID on container does not match sample ID on paperwork. Explain: _____
2. <input type="checkbox"/> Sample received without proper preservative.	
<input type="checkbox"/> Cooler temperature not within 4°C ± 2°C	
Record temperature: _____	
<input type="checkbox"/> pH _____	9. <input type="checkbox"/> All coolers on airbill not received with shipment.
<input type="checkbox"/> other: _____	10. <input type="checkbox"/> Sample volume insufficient for analysis
3. <input type="checkbox"/> Sample received in improper container.	11. <input type="checkbox"/> Other (explain below)
4. <input type="checkbox"/> Sample received without proper paperwork. Explain: _____	
5. <input type="checkbox"/> Paperwork received without sample.	
6. <input type="checkbox"/> No sample ID on sample container.	
7. <input checked="" type="checkbox"/> Custody tape disturbed/broken/missing/not tamper evident type (circle all that apply).	

☒ No variances were noted during sample receipt.

☐ Cooler Temperature Upon Receipt in °C: 6°

Temperature Variance Does Not Affect the Following Analyses: _____

Notes: _____

Corrective Action:

<input type="checkbox"/> Client's Name: _____	Informed verbally on: _____	By: _____
<input type="checkbox"/> Client's Name: _____	Informed in writing on: _____	By: _____
<input type="checkbox"/> Sample(s) processed "as is".	_____	
<input type="checkbox"/> Sample(s) on hold until: _____	If released, notify: _____	

Sample Control Supervisor Review: (or designate) Subst Ngr Date: 04.27.01

Project Management Review: MW Date: 4.28.01

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE
THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED
IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY HIS/HER INITIALS
AND THE DATE NEXT TO THAT ITEM

METALS

BECHTEL HANFORD, INC.

Client Sample ID: B11RJ5

TOTAL Metals

Lot-Sample #...: F1D270317-001
Date Sampled...: 04/24/01 Date Received...: 04/27/01
% Moisture.....: Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1129176						
Barium	227	20.0	mg/kg	SW846 6010B	05/09-05/16/01	ECH431AA
		Dilution Factor: 1		MDL.....: 0.090		
Cadmium	ND	0.50	mg/kg	SW846 6010B	05/09-05/16/01	ECH431AB
		Dilution Factor: 1		MDL.....: 0.020		
Chromium	12.0	1.0	mg/kg	SW846 6010B	05/09-05/16/01	ECH431AL
		Dilution Factor: 1		MDL.....: 0.090		
Lead	1.2	0.30	mg/kg	SW846 6010B	05/09-05/16/01	ECH431AH
		Dilution Factor: 1		MDL.....: 0.15		

TOTAL Metals

Matrix.....: SOLID

Date Received..: 04/27/01

MS Lot-Sample #: F1D270317-001 Prep Batch #...: 1129176

227	200	417	mg/kg	95	SW846	6010B	05/09-05/16/01	ECH431AC
227	200	418	mg/kg	96	0.30 SW846	6010B	05/09-05/16/01	ECH431AD

Dilution Factor: 1

ND	5.00	3.26	N	mg/kg	65		SW846	6010B	05/09-05/16/01	ECH431AF
ND	5.00	3.21	N	mg/kg	64	1.8	SW846	6010B	05/09-05/16/01	ECH431AG

Dilution Factor: 1

12.0	20.0	28.8	mg/kg	84	SW846	6010B	05/09-05/16/01	ECH431AM
12.0	20.0	29.0	mg/kg	85	0.37 SW846	6010B	05/09-05/16/01	ECH431AN

Dilution Factor: 1

1.2	50.0	42.8	mg/kg	83		SW846	6010B	05/09-05/16/01	ECH431AJ
1.2	50.0	42.2	mg/kg	82	1.3	SW846	6010B	05/09-05/16/01	ECH431AK

Dilution Factor: 1

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1D270317

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1E090000-176 Prep Batch #...: 1129176						
Barium	ND	20.0	mg/kg	SW846 6010B	05/09-05/15/01	EC2811A5
		Dilution Factor: 1				
Cadmium	ND	0.50	mg/kg	SW846 6010B	05/09-05/15/01	EC2811A6
		Dilution Factor: 1				
Chromium	ND	1.0	mg/kg	SW846 6010B	05/09-05/15/01	EC2811A7
		Dilution Factor: 1				
Lead	ND	0.30	mg/kg	SW846 6010B	05/09-05/15/01	EC2811AC
		Dilution Factor: 1				

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F1D270317

Matrix.....: SOLID

<u>PARAMETER</u>	<u>SPIKE</u> <u>AMOUNT</u>	<u>MEASURED</u> <u>AMOUNT</u>	<u>UNITS</u>	<u>PERCNT</u> <u>RECVRY</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>WORK</u> <u>ORDER #</u>
LCS Lot-Sample#: F1E090000-176 Prep Batch #...: 1129176							
Lead	138	140	mg/kg	101	SW846 6010B	05/09-05/15/01	EC2811CA
			Dilution Factor: 1				
Barium	124	144	mg/kg	116	SW846 6010B	05/09-05/15/01	EC2811C4
			Dilution Factor: 1				
Cadmium	118	127	mg/kg	107	SW846 6010B	05/09-05/15/01	EC2811C5
			Dilution Factor: 1				
Chromium	89.3	90.0	mg/kg	101	SW846 6010B	05/09-05/15/01	EC2811C6
			Dilution Factor: 1				

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.